5
Mathematics 6+

Contents

Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Number	**Number**
• Counts numbers 0-20*	• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Orders whole numbers less than 10* • Writes whole numbers in standard and expanded form through the tens
Operations: Add and Subtract	**Operations: Add and Subtract**
• Uses models to construct whole number addition facts with addends through 10* • Uses models to calculate whole number sums through 99* • Adds two 1-digit numbers with sums to 10 in horizontal format	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format* • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)*

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	• Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping
Operations: Multiply and Divide	**Operations: Multiply and Divide**
	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Identifies the missing operation symbol - 1-step number sentence
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**
New Vocabulary: none	*New Vocabulary:* numeral
New Signs and Symbols: + addition, = is equal to, □ variable	*New Signs and Symbols:* ÷ division, × multiplication, – subtraction

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Number	**Number**	**Number**
• Counts numbers 0-20*	• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Orders whole numbers less than 10* • Writes whole numbers in standard and expanded form through the tens	• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Identifies a whole number that comes between 2 given numbers (20 to 100)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20* • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses models to construct whole number addition facts	• Uses a number line to construct addition facts with	• Uses a number line to construct addition facts with

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with addends through 10* • Uses models to calculate whole number sums through 99* • Adds two 1-digit numbers with sums to 10 in horizontal format	sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format* • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)* • Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping	sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100* • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Adds multiple-digit numbers, with no regrouping, with sums over 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 20 (change unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses models to calculate differences through 100 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20

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		• Adds 1-digit numbers with sums to 18 (with parentheses)
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Identifies the missing operation symbol - 1-step number sentence	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically • Identifies the missing operation symbol - 1-step number sentence
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
New Vocabulary: none	*New Vocabulary:* numeral	*New Vocabulary:* before, between, counting order, eighth, eleventh, fifth, hundred, ninth, seventh, tenth, thousand
New Signs and Symbols: + addition, = is equal to, □ variable	*New Signs and Symbols:* ÷ division, × multiplication, – subtraction	*New Signs and Symbols:* ( ) order of operations, ¢ cent sign, lb pound

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Number	**Number**	**Number**
• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Orders whole numbers less than 10* • Writes whole numbers in standard and expanded form through the tens	• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Identifies a whole number that comes between 2 given numbers (20 to 100)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20* • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Counts objects that are grouped into tens and ones

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		• Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Solves problems using ordinal numbers* • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model* • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Compares and orders decimals to the hundredths place (same number of digits after decimal) • Applies base ten place value concepts to solve problems using decimals* • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only)
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format* • Adds multiple 1-digit numbers	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100* • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000	• Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given

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• Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)* • Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping	• Adds multiple-digit numbers, with no regrouping, with sums over 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 20 (change unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses models to calculate differences through 100 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20 • Adds 1-digit numbers with sums to 18 (with parentheses)	• Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Instantly recalls basic subtraction facts with minuend less than 10* • Subtracts a 1-digit number from a multiple-digit number* • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts 2- and/or 3-digit numbers with no regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves real-world whole number problems involving addition and subtraction • Adds decimals to the hundredths place (same number of digits) • Subtracts decimals to the hundredths place (same number of digits) without regrouping
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Identifies the missing operation symbol - 1-step number sentence	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically • Identifies the missing operation symbol - 1-step	• Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number

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	number sentence	multiplication facts to 10 x 10 • Uses sharing for division • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money • Identifies the missing operation symbol - 2-step number sentence*
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
New Vocabulary: numeral	*New Vocabulary:* before, between, counting order, eighth, eleventh, fifth, hundred, ninth, seventh, tenth, thousand	*New Vocabulary:* closest, digit, fourth, fourths, fraction, gave, hundred thousand, left, million, nearest, number statement, one, round, row, smallest, ten, ten thousand, third, thirds, thousandth, unifix cubes
New Signs and Symbols: ÷ division, × multiplication, – subtraction	*New Signs and Symbols:* ( ) order of operations, ¢ cent sign, lb pound	*New Signs and Symbols:* { } set notation, $ dollar sign, < less than, long division symbol

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Number	**Number**	**Number**
• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Identifies a whole number that comes between 2 given numbers (20 to 100)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20* • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Counts objects that are grouped into tens and ones	• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in

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	• Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Solves problems using ordinal numbers* • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model* • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Compares and orders decimals to the hundredths place (same number of digits after decimal) • Applies base ten place value concepts to solve problems using decimals* • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only)	whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Solves problems using ordinal numbers* • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)* • Identifies numbers as composite • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only)
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100*	• Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000	• Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems

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- Adds 3-digit numbers with no regrouping
- Adds 3-digit numbers, with regrouping, with sums under 1000
- Adds multiple-digit numbers, with no regrouping, with sums over 1000*
- Solves real-world whole number addition problems with sums to 20 (result unknown)
- Solves real-world whole number addition problems with sums to 20 (start unknown)*
- Solves real-world whole number addition problems with sums to 20 (change unknown)*
- Solves real-world whole number addition problems with sums to 100 (result unknown)*
- Solves real-world whole number addition problems with sums to 1000
- Uses models to calculate differences through 100 (whole numbers)*
- Uses models to calculate differences through 1000 (whole numbers)*
- Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only)
- Uses strategies for subtraction facts (e.g., counting back, one less, two less)*
- Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically
- Subtracts a 1-digit number from a multiple-digit number*
- Subtracts a 2-digit number from a 2-digit number, with no regrouping
- Subtracts 2- and/or 3-digit numbers with no regrouping
- Solves real-world whole number problems involving subtraction with numbers under 20
- Adds 1-digit numbers with sums to 18 (with parentheses)

- Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given
- Solves real-world whole number addition problems with sums to 20 (start unknown)*
- Solves real-world whole number addition problems with sums to 100 (result unknown)*
- Solves real-world whole number addition problems with sums to 1000
- Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)*
- Uses models to calculate differences through 1000 (whole numbers)*
- Instantly recalls basic subtraction facts with minuend less than 10*
- Subtracts a 1-digit number from a multiple-digit number*
- Subtracts 1-digit number from a 2-digit number with regrouping*
- Subtracts a 2-digit number from a 2-digit number, with regrouping
- Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on)
- Subtracts 2- and/or 3-digit numbers with no regrouping
- Subtracts 3- or 4-digit numbers with regrouping
- Performs mental subtraction with numbers under 1000
- Subtracts multiple-digit numbers with no regrouping*
- Solves real-world whole number problems involving subtraction with numbers under 20
- Solves real-world whole number problems involving subtraction with numbers 100 and under
- Solves real-world whole number problems involving subtraction with numbers under 1000
- Solves real-world whole number problems involving addition and subtraction
- Adds decimals to the hundredths place (same number of digits)
- Subtracts decimals to the hundredths place (same number of digits) without regrouping

with sums to 100 (start unknown)*
- Solves whole number addition word problems with sums over 1000
- Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)*
- Adds and subtracts whole numbers using place value
- Subtracts 1-digit number from a 2-digit number with regrouping*
- Subtracts a 2-digit number from a 2-digit number, with regrouping
- Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on)
- Subtracts a 2-digit number from a 3-digit number with a single regrouping
- Subtracts 3- or 4-digit numbers with regrouping
- Performs mental subtraction with numbers under 1000
- Performs mental subtraction with numbers 1000 and over
- Subtracts multiple-digit numbers with no regrouping*
- Solves real-world whole number problems involving subtraction with numbers 100 and under
- Solves real-world whole number problems involving subtraction with numbers under 1000
- Solves whole number subtraction word problems with numbers over 1000
- Solves problems using the inverse relationship between addition and subtraction*
- Uses models to add and subtract fractions and connect the actions to algorithms*
- Subtracts fractions with like denominators without reducing
- Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators
- Adds decimals to the hundredths place (same number of digits)
- Adds decimals to the hundredths place in vertical format (not same number of digits)*
- Adds decimals to the thousandths place vertically with and without regrouping
- Subtracts decimals to the hundredths place (same number of digits) without regrouping
- Subtracts decimals to the hundredths place (same

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		number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Solves real-world problems involving decimals (not money) using addition and subtraction
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically • Identifies the missing operation symbol - 1-step number sentence	• Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses sharing for division • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money • Identifies the missing operation symbol - 2-step number sentence*	• Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Evaluates numerical expressions using grouping symbols (whole numbers only) • Identifies the missing operation symbol - 2-step number sentence* • Solves real-world 1-step problems involving multiplication or division of a whole number by a

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		fraction* • Multiplies a decimal by whole number
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
		• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Solves simple problems involving miles/kilometers per hour
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
New Vocabulary: before, between, counting order, eighth, eleventh, fifth, hundred, ninth, seventh, tenth, thousand	*New Vocabulary:* closest, digit, fourth, fourths, fraction, gave, hundred thousand, left, million, nearest, number statement, one, round, row, smallest, ten, ten thousand, third, thirds, thousandth, unifix cubes	*New Vocabulary:* billion, capacity, composite number, each, hundred million, hundredths, longer, miles per hour, prime number, quintillion, standard numeral, symbol, thousands, trillion, zero
New Signs and Symbols: ( ) order of operations, ¢ cent sign, lb pound	*New Signs and Symbols:* { } set notation, $ dollar sign, < less than, long division symbol	*New Signs and Symbols:* ≈ approximately equal to, °F degrees Fahrenheit, ft feet, > greater than, ≥ greater than or equal to, ≤ less than or equal to, mph miles per hour, % percent, R remainder

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Number	**Number**	**Number**
• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Counts objects that are grouped into tens and ones	• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in	• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Identifies a whole number that comes before and/or after a given number (over 100)* • Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding* • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Solves problems using ordinal numbers* • Identifies halves of a region using nonadjacent parts

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• Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Solves problems using ordinal numbers* • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model* • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Compares and orders decimals to the hundredths place (same number of digits after decimal) • Applies base ten place value concepts to solve problems using decimals* • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only)	whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Solves problems using ordinal numbers* • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)* • Identifies numbers as composite • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only)	• Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)* • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Rounds decimals to the nearest whole number* • Identifies the place value and value of each digit to the tenths* • Compares integers on a number line* • Orders integers on a number line* • Writes a terminating decimal as a fraction or mixed number • Determines multiples of a whole number* • Determines common multiples of whole numbers* • Applies rules of divisibility by 5's* • Applies rules of divisibility by 2's • Writes a number "squared" in factored form* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses front end estimation for multiplication and division computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only)
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000	• Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems	• Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems

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- Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given
- Solves real-world whole number addition problems with sums to 20 (start unknown)*
- Solves real-world whole number addition problems with sums to 100 (result unknown)*
- Solves real-world whole number addition problems with sums to 1000
- Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)*
- Uses models to calculate differences through 1000 (whole numbers)*
- Instantly recalls basic subtraction facts with minuend less than 10*
- Subtracts a 1-digit number from a multiple-digit number*
- Subtracts 1-digit number from a 2-digit number with regrouping*
- Subtracts a 2-digit number from a 2-digit number, with regrouping
- Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on)
- Subtracts 2- and/or 3-digit numbers with no regrouping
- Subtracts 3- or 4-digit numbers with regrouping
- Performs mental subtraction with numbers under 1000
- Subtracts multiple-digit numbers with no regrouping*
- Solves real-world whole number problems involving subtraction with numbers under 20
- Solves real-world whole number problems involving subtraction with numbers 100 and under
- Solves real-world whole number problems involving subtraction with numbers under 1000
- Solves real-world whole number problems involving addition and subtraction
- Adds decimals to the hundredths place (same number of digits)
- Subtracts decimals to the hundredths place (same number of digits) without regrouping

- with sums to 100 (start unknown)*
- Solves whole number addition word problems with sums over 1000
- Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)*
- Adds and subtracts whole numbers using place value
- Subtracts 1-digit number from a 2-digit number with regrouping*
- Subtracts a 2-digit number from a 2-digit number, with regrouping
- Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on)
- Subtracts a 2-digit number from a 3-digit number with a single regrouping
- Subtracts 3- or 4-digit numbers with regrouping
- Performs mental subtraction with numbers under 1000
- Performs mental subtraction with numbers 1000 and over
- Subtracts multiple-digit numbers with no regrouping*
- Solves real-world whole number problems involving subtraction with numbers 100 and under
- Solves real-world whole number problems involving subtraction with numbers under 1000
- Solves whole number subtraction word problems with numbers over 1000
- Solves problems using the inverse relationship between addition and subtraction*
- Uses models to add and subtract fractions and connect the actions to algorithms*
- Subtracts fractions with like denominators without reducing
- Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators
- Adds decimals to the hundredths place (same number of digits)
- Adds decimals to the hundredths place in vertical format (not same number of digits)*
- Adds decimals to the thousandths place vertically with and without regrouping
- Subtracts decimals to the hundredths place (same number of digits) without regrouping
- Subtracts decimals to the hundredths place (same

- with sums to 100 (start unknown)*
- Adds and subtracts whole numbers using place value
- Subtracts 3- or 4-digit numbers with regrouping
- Performs mental subtraction with numbers 1000 and over
- Subtracts numbers with 5 digits or more with regrouping
- Uses strategies to determine 2 or more missing digits (addition/subtraction only)
- Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis)
- Solves whole number subtraction word problems with numbers over 1000
- Identifies the missing symbol to compare 2 expressions (e.g., < or >)
- Adds fractions with like denominators without reducing
- Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)*
- Adds whole numbers and fractions
- Uses models to add and subtract fractions and connect the actions to algorithms*
- Subtracts fractions with like denominators without reducing
- Subtracts mixed fractions with like denominators with no regrouping
- Subtracts whole numbers, fractions, and mixed fractions*
- Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators
- Adds decimals to the hundredths place in vertical format (not same number of digits)*
- Adds decimals to the thousandths place horizontally with and without regrouping
- Subtracts decimals to the hundredths place (same number of digits) with regrouping
- Subtracts decimals to the thousandths place, vertically, with and without regrouping
- Subtracts decimals through the hundred-thousandths place, vertically*
- Solves real-world problems involving addition and subtraction of integers*

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	number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Solves real-world problems involving decimals (not money) using addition and subtraction	
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses sharing for division • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money • Identifies the missing operation symbol - 2-step number sentence*	• Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Evaluates numerical expressions using grouping symbols (whole numbers only) • Identifies the missing operation symbol - 2-step number sentence* • Solves real-world 1-step problems involving multiplication or division of a whole number by a	• Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder

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	fraction* • Multiplies a decimal by whole number	• Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10 • Evaluates numerical expressions using grouping symbols (whole numbers only) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Identifies the missing operation symbol - 2-step number sentence* • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Multiplies a decimal by whole number • Divides decimal by a whole number
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
	• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Solves simple problems involving miles/kilometers per hour	• Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price*
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
New Vocabulary: closest, digit, fourth, fourths, fraction, gave, hundred thousand, left, million, nearest, number statement, one, round, row, smallest, ten, ten thousand, third, thirds, thousandth, unifix cubes	*New Vocabulary:* billion, capacity, composite number, each, hundred million, hundredths, longer, miles per hour, prime number, quintillion, standard numeral, symbol, thousands, trillion, zero	*New Vocabulary:* above, annual, below, biggest, column, common multiple, compatible numbers, divisible, expanded numeral, hundred thousands, hundredth, integer, larger, magic square, miles per gallon, mixed number, multiple, place value, plus, ten thousands, twice
New Signs and Symbols: { } set notation, $ dollar sign, < less than, long division symbol	*New Signs and Symbols:* ≈ approximately equal to, °F degrees Fahrenheit, ft feet, > greater than, ≥ greater than or equal to, ≤ less than or equal to, mph miles per hour, % percent, R remainder	*New Signs and Symbols:* ? a variable, a.m., ° degrees, °C degrees Celsius, □ missing operation, mpg miles per gallon, - negative number, ∅ null or empty set, p.m.

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Number	**Number**	**Number**
• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in	• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Identifies a whole number that comes before and/or after a given number (over 100)* • Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding* • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Solves problems using ordinal numbers* • Identifies halves of a region using nonadjacent parts	• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Writes whole numbers in standard and expanded form through the hundred thousands • Evaluates number sense strategies used to solve problems* • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)*

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whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Solves problems using ordinal numbers* • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)* • Identifies numbers as composite • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only)	• Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)* • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Rounds decimals to the nearest whole number* • Identifies the place value and value of each digit to the tenths* • Compares integers on a number line* • Orders integers on a number line* • Writes a terminating decimal as a fraction or mixed number • Determines multiples of a whole number* • Determines common multiples of whole numbers* • Applies rules of divisibility by 5's* • Applies rules of divisibility by 2's • Writes a number "squared" in factored form* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses front end estimation for multiplication and division computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only)	• Represents a decimal to the hundredths place (e.g., three hundredths = 0.03) • Writes a decimal for a shaded region to the tenths place* • Rounds decimals to the nearest whole number* • Rounds decimals to the nearest tenth • Identifies the place value and value of each digit to the tenths* • Applies base ten place value concepts to solve problems using decimals (analysis)* • Identifies an integer from a number line • Compares two integers • Orders integers on a number line* • Uses correct terminology for integers* • Expresses a simple fraction as a decimal • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)* • Expresses a percent as a fraction with 100 as the denominator and vice versa • Writes a basic percent as a decimal and vice versa* • Expresses a percent as a decimal and vice versa • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Determines multiples of a whole number* • Determines common multiples of whole numbers* • Identifies numbers as prime • Identifies common factors of two or more numbers* • Identifies the greatest common factor of whole numbers • Applies rules of divisibility by 5's* • Uses concrete and pictorial models to represent proportions* • Recognizes and writes proportions* • Identifies the percent represented in a 2-D region* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000

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		• Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only)
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Solves whole number addition word problems with sums over 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Adds and subtracts whole numbers using place value • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts a 2-digit number from a 3-digit number with a single regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Performs mental subtraction with numbers 1000 and	• Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Adds and subtracts whole numbers using place value • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Identifies the missing symbol to compare 2 expressions (e.g., < or >) • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)*	• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary

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over • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves whole number subtraction word problems with numbers over 1000 • Solves problems using the inverse relationship between addition and subtraction* • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place (same number of digits) • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place vertically with and without regrouping • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Solves real-world problems involving decimals (not money) using addition and subtraction	• Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions* • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place horizontally with and without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically* • Solves real-world problems involving addition and subtraction of integers*	• Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Adds integers with like signs • Solves real-world problems involving addition and subtraction of integers*
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number	• Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with	• Uses number sense strategies to solve problems (multiplication/division)* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers

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multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Evaluates numerical expressions using grouping symbols (whole numbers only) • Identifies the missing operation symbol - 2-step number sentence* • Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction* • Multiplies a decimal by whole number	regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10 • Evaluates numerical expressions using grouping symbols (whole numbers only) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Identifies the missing operation symbol - 2-step	• Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Solves problems using the inverse relationship between multiplication and division • Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Solves real-world problems involving decimals (not

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	number sentence* • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Multiplies a decimal by whole number • Divides decimal by a whole number	money) using multiplication* • Divides decimal by a whole number • Multiplies integers with unlike signs* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Solves simple problems involving miles/kilometers per hour	• Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price*	• Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Solves simple problems involving miles per gallon • Determines unit price*
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
		• Calculates the value of a power (e.g., 2^3 = 8)
New Vocabulary: billion, capacity, composite number, each, hundred million, hundredths, longer, miles per hour, prime number, quintillion, standard numeral, symbol, thousands, trillion, zero	*New Vocabulary:* above, annual, below, biggest, column, common multiple, compatible numbers, divisible, expanded numeral, hundred thousands, hundredth, integer, larger, magic square, miles per gallon, mixed number, multiple, place value, plus, ten thousands, twice	*New Vocabulary:* common factor, decimal form, decimal point, factor tree, greatest common factor, interest, lowest term, lowest terms, negative, positive, reduce, smaller, standard form, triple
New Signs and Symbols: ≈ approximately equal to, °F degrees Fahrenheit, ft feet, > greater than, ≥ greater than or equal to, ≤ less than or equal to, mph miles per hour, % percent, R remainder	*New Signs and Symbols:* ? a variable, a.m., ° degrees, °C degrees Celsius, □ missing operation, mpg miles per gallon, - negative number, ∅ null or empty set, p.m.	*New Signs and Symbols:* ( ) parenthesis around an integer, in. inch, kg kilogram, - negative sign, ≠ not equal to, + positive number

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Number	**Number**	**Number**
• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Identifies a whole number that comes before and/or after a given number (over 100)* • Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding* • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Solves problems using ordinal numbers* • Identifies halves of a region using nonadjacent parts	• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Writes whole numbers in standard and expanded form through the hundred thousands • Evaluates number sense strategies used to solve problems* • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)*	• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Rounds decimals to the nearest hundredth • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in

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- Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)*
- Writes mixed numbers as improper fractions and improper fractions as mixed numbers
- Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10)
- Rounds decimals to the nearest whole number*
- Identifies the place value and value of each digit to the tenths*
- Compares integers on a number line*
- Orders integers on a number line*
- Writes a terminating decimal as a fraction or mixed number
- Determines multiples of a whole number*
- Determines common multiples of whole numbers*
- Applies rules of divisibility by 5's*
- Applies rules of divisibility by 2's
- Writes a number "squared" in factored form*
- Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)*
- Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)*
- Uses front end estimation for multiplication and division computations (whole numbers only)*
- Uses rounding to estimate answers to addition and subtraction problems (whole numbers only)
- Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only)

- Represents a decimal to the hundredths place (e.g., three hundredths = 0.03)
- Writes a decimal for a shaded region to the tenths place*
- Rounds decimals to the nearest whole number*
- Rounds decimals to the nearest tenth
- Identifies the place value and value of each digit to the tenths*
- Applies base ten place value concepts to solve problems using decimals (analysis)*
- Identifies an integer from a number line
- Compares two integers
- Orders integers on a number line*
- Uses correct terminology for integers*
- Expresses a simple fraction as a decimal
- Writes a simple mixed fraction as a decimal and vice versa
- Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10
- Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)*
- Expresses a percent as a fraction with 100 as the denominator and vice versa
- Writes a basic percent as a decimal and vice versa*
- Expresses a percent as a decimal and vice versa
- Determines factors of whole numbers
- Completes a factor tree for a number (prime factorization)*
- Determines multiples of a whole number*
- Determines common multiples of whole numbers*
- Identifies numbers as prime
- Identifies common factors of two or more numbers*
- Identifies the greatest common factor of whole numbers
- Applies rules of divisibility by 5's*
- Uses concrete and pictorial models to represent proportions*
- Recognizes and writes proportions*
- Identifies the percent represented in a 2-D region*
- Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2)
- Uses powers to represent 10, 100, 1000, 10,000, and 100,000

numbers through the ten thousandths and beyond
- Compares two integers
- Orders integers
- Locates rational numbers on a number line
- Orders rational numbers, in a/b form*
- Writes a simple mixed fraction as a decimal and vice versa
- Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10
- Writes a ratio as a decimal and vice versa*
- Expresses a percent as a fraction and vice versa
- Writes a ratio as a percent and vice versa*
- Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)*
- Orders fractions and decimals to the hundred thousandths
- Determines factors of whole numbers
- Completes a factor tree for a number (prime factorization)*
- Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility)
- Determines common denominators of fractions
- Uses factor and multiple concepts to solve simple problems
- Identifies common factors of two or more numbers*
- Identifies the greatest common factor of whole numbers
- Uses divisibility concepts to solve problems*
- Uses concrete and pictorial models to represent ratios*
- Identifies the percent represented in a given model*
- Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2)
- Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000)
- Uses powers to represent 10, 100, 1000, 10,000, and 100,000
- Compares numbers written exponentially
- Defines "absolute value"*
- Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)*
- Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)*

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	• Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only)	• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)*
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Adds and subtracts whole numbers using place value • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Identifies the missing symbol to compare 2 expressions (e.g., < or >) • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)*	• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits)

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• Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions* • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place horizontally with and without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically* • Solves real-world problems involving addition and subtraction of integers*	• Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Adds integers with like signs • Solves real-world problems involving addition and subtraction of integers*	• Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs • Adds several positive and negative integers • Solves real-world problems involving addition and subtraction of integers* • Solves problems involving addition and subtraction of integers* • Adds rational expressions in decimal form
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number	• Uses number sense strategies to solve problems (multiplication/division)* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no	• Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)* • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when dividing

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• Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10 • Evaluates numerical expressions using grouping symbols (whole numbers only) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Identifies the missing operation symbol - 2-step number sentence* • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Multiplies a decimal by whole number • Divides decimal by a whole number	remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Solves problems using the inverse relationship between multiplication and division • Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Solves real-world problems involving decimals (not money) using multiplication* • Divides decimal by a whole number • Multiplies integers with unlike signs* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*	whole numbers • Multiplies a fraction by a fraction without reducing to simplest form (complex problem) • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions • Divides a fraction by a fraction • Divides a mixed fraction by a fraction • Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions)* • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Multiplies a decimal by 10, 100, 1000 • Multiplies a decimal by a decimal (factors to thousandths) • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Multiplies integers with unlike signs* • Uses a number line to determine the midpoint between a positive and negative number* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*

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Ratio, Rates, Proportion, and Percent	Ratio, Rates, Proportion, and Percent	Ratio, Rates, Proportion, and Percent
• Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price*	• Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Solves simple problems involving miles per gallon • Determines unit price*	• Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what) • Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals* • Solves complex problems involving miles per gallon • Solves complex problems involving miles/kilometers per hour*
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
	• Calculates the value of a power (e.g., 2^3 = 8)	• Calculates the value of a power (e.g., 2^3 = 8)
New Vocabulary: above, annual, below, biggest, column, common multiple, compatible numbers, divisible, expanded numeral, hundred thousands, hundredth, integer, larger, magic square, miles per gallon, mixed number, multiple, place value, plus, ten thousands, twice	*New Vocabulary:* common factor, decimal form, decimal point, factor tree, greatest common factor, interest, lowest term, lowest terms, negative, positive, reduce, smaller, standard form, triple	*New Vocabulary:* absolute value, borrow, common denominator, cord, expanded notation, exponent, half hour, least common denominator, lowest common denominator, range, real number, short, tax, ten million, ten thousandth, tenths, thousandths, whole
New Signs and Symbols: ? a variable, a.m., ° degrees, °C degrees Celsius, □ missing operation, mpg miles per gallon, - negative number, ∅ null or empty set, p.m.	*New Signs and Symbols:* ( ) parenthesis around an integer, in. inch, kg kilogram, - negative sign, ≠ not equal to, + positive number	*New Signs and Symbols:* gal gallon, I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, : used with time

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Number	**Number**	**Number**
• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Writes whole numbers in standard and expanded form through the hundred thousands • Evaluates number sense strategies used to solve problems* • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)*	• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Rounds decimals to the nearest hundredth • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in	• Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Orders rational numbers, in a/b form* • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents • Orders fractions, decimals, and integers on a number line* • Determines the prime factorization of a number • Applies rules of divisibility by 3's* • Applies rules of divisibility • Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Compares numbers written exponentially • Uses correct terminology for powers* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation

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• Represents a decimal to the hundredths place (e.g., three hundredths = 0.03) • Writes a decimal for a shaded region to the tenths place* • Rounds decimals to the nearest whole number* • Rounds decimals to the nearest tenth • Identifies the place value and value of each digit to the tenths* • Applies base ten place value concepts to solve problems using decimals (analysis)* • Identifies an integer from a number line • Compares two integers • Orders integers on a number line* • Uses correct terminology for integers* • Expresses a simple fraction as a decimal • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)* • Expresses a percent as a fraction with 100 as the denominator and vice versa • Writes a basic percent as a decimal and vice versa* • Expresses a percent as a decimal and vice versa • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Determines multiples of a whole number* • Determines common multiples of whole numbers* • Identifies numbers as prime • Identifies common factors of two or more numbers* • Identifies the greatest common factor of whole numbers • Applies rules of divisibility by 5's* • Uses concrete and pictorial models to represent proportions* • Recognizes and writes proportions* • Identifies the percent represented in a 2-D region* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000	numbers through the ten thousandths and beyond • Compares two integers • Orders integers • Locates rational numbers on a number line • Orders rational numbers, in a/b form* • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a ratio as a decimal and vice versa* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)* • Orders fractions and decimals to the hundred thousandths • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Determines common denominators of fractions • Uses factor and multiple concepts to solve simple problems • Identifies common factors of two or more numbers* • Identifies the greatest common factor of whole numbers • Uses divisibility concepts to solve problems* • Uses concrete and pictorial models to represent ratios* • Identifies the percent represented in a given model* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000 • Compares numbers written exponentially • Defines "absolute value"* • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)*	• Writes a decimal in scientific notation* • Represents absolute value using positive and negative numbers*

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• Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only)	• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)*	
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits)	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs • Adds several positive and negative integers • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)* • Subtracts rational expressions in decimal form*

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• Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Adds integers with like signs • Solves real-world problems involving addition and subtraction of integers*	• Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs • Adds several positive and negative integers • Solves real-world problems involving addition and subtraction of integers* • Solves problems involving addition and subtraction of integers* • Adds rational expressions in decimal form	
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Uses number sense strategies to solve problems (multiplication/division)* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Solves problems using the inverse relationship between multiplication and division	• Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)* • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when dividing whole numbers • Multiplies a fraction by a fraction without reducing to simplest form (complex problem) • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions • Divides a fraction by a fraction	• Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers* • Evaluates numerical expressions using the order of operations (whole numbers only) • Evaluates expressions using the order of operations, including exponents (whole numbers only) • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number • Uses models to multiply and divide fractions and connect the actions to algorithms* • Multiplies mixed fractions • Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms* • Divides a fraction by a fraction • Divides a fraction by a whole number • Divides a whole number by a fraction* • Divides a mixed fraction by a whole number* • Divides a whole number by a mixed fraction* • Divides a mixed fraction by a fraction • Divides a fraction by a mixed fraction* • Divides a mixed fraction by a mixed fraction • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple

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• Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Evaluates a numerical expression involving more than one operation* • Solves real-world problems involving 2-step multiple operations, whole numbers only • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Solves real-world problems involving decimals (not money) using multiplication* • Divides decimal by a whole number • Multiplies integers with unlike signs* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*	• Divides a mixed fraction by a fraction • Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions)* • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Multiplies a decimal by 10, 100, 1000 • Multiplies a decimal by a decimal (factors to thousandths) • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Multiplies integers with unlike signs* • Uses a number line to determine the midpoint between a positive and negative number* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*	operations, conversions)* • Multiplies a decimal by 10, 100, 1000 • Divides a whole number by a decimal • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Describes the effects of multiplying a number by a number between 0 and 1* • Multiplies integers with like signs* • Divides integers with like signs* • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Multiplies rational expressions* • Divides rational expressions in a/b form* • Calculates sums combining fractions, decimals, and percents
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Solves simple problems involving miles per gallon • Determines unit price*	• Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what)	• Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90)

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	• Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals* • Solves complex problems involving miles per gallon • Solves complex problems involving miles/kilometers per hour*	• Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease* • Solves problems involving tax and tips • Calculates commission/deductions and total pay • Solves complex problems involving miles per gallon • Solves problems comparing unit prices
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
• Calculates the value of a power (e.g., 2^3 = 8)	• Calculates the value of a power (e.g., 2^3 = 8)	• Calculates the power of a number (e.g., 8 = 2^3) • Evaluates expressions containing powers (e.g., 3^2 x 2^3) • Applies rules for multiplying and dividing powers • Calculates the positive square root of a perfect square • Solves problems with scientific notation* • Simplifies rational expressions with absolute value
New Vocabulary: common factor, decimal form, decimal point, factor tree, greatest common factor, interest, lowest term, lowest terms, negative, positive, reduce, smaller, standard form, triple	*New Vocabulary:* absolute value, borrow, common denominator, cord, expanded notation, exponent, half hour, least common denominator, lowest common denominator, range, real number, short, tax, ten million, ten thousandth, tenths, thousandths, whole	*New Vocabulary:* commission, cubed, discount, equality, prime factor, prime factorization, representative sample, scientific notation, tenth power
New Signs and Symbols: ( ) parenthesis around an integer, in. inch, kg kilogram, - negative sign, ≠ not equal to, + positive number	*New Signs and Symbols:* gal gallon, I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, : used with time	*New Signs and Symbols:* [ ] square brackets, || absolute value, BC, km kilometer/kilometre, • point, segment overbar, square root symbol, – subtraction

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Number	**Number**	**Number**
• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Rounds decimals to the nearest hundredth • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in	• Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Orders rational numbers, in a/b form* • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents • Orders fractions, decimals, and integers on a number line* • Determines the prime factorization of a number • Applies rules of divisibility by 3's* • Applies rules of divisibility • Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Compares numbers written exponentially • Uses correct terminology for powers* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation	• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)* • Determines the prime factorization of a number using powers • Uses factor and multiple concepts to solve difficult problems • Identifies the least common multiple of whole numbers* • Identifies the greatest common factor and least common multiple of multiple whole numbers* • Identifies the ratio from a given real-world situation* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation • Writes a decimal in scientific notation*

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numbers through the ten thousandths and beyond • Compares two integers • Orders integers • Locates rational numbers on a number line • Orders rational numbers, in a/b form* • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a ratio as a decimal and vice versa* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)* • Orders fractions and decimals to the hundred thousandths • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Determines common denominators of fractions • Uses factor and multiple concepts to solve simple problems • Identifies common factors of two or more numbers* • Identifies the greatest common factor of whole numbers • Uses divisibility concepts to solve problems* • Uses concrete and pictorial models to represent ratios* • Identifies the percent represented in a given model* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000 • Compares numbers written exponentially • Defines "absolute value"* • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)*	• Writes a decimal in scientific notation* • Represents absolute value using positive and negative numbers*	

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• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)*		
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs • Adds several positive and negative integers • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)* • Subtracts rational expressions in decimal form*	• Uses a number line to determine the distance between a positive and negative number • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)*

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• Adds several positive and negative integers • Solves real-world problems involving addition and subtraction of integers* • Solves problems involving addition and subtraction of integers* • Adds rational expressions in decimal form		
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)* • Solves real-world multiple-step problems involving whole numbers* • Predicts the relative size of the answer when dividing whole numbers • Multiplies a fraction by a fraction without reducing to simplest form (complex problem) • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions • Divides a fraction by a fraction • Divides a mixed fraction by a fraction • Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions)* • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)	• Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers* • Evaluates numerical expressions using the order of operations (whole numbers only) • Evaluates expressions using the order of operations, including exponents (whole numbers only) • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number • Uses models to multiply and divide fractions and connect the actions to algorithms* • Multiplies mixed fractions • Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms* • Divides a fraction by a fraction • Divides a fraction by a whole number • Divides a whole number by a fraction* • Divides a mixed fraction by a whole number* • Divides a whole number by a mixed fraction* • Divides a mixed fraction by a fraction • Divides a fraction by a mixed fraction* • Divides a mixed fraction by a mixed fraction • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions)* • Multiplies a decimal by 10, 100, 1000 • Divides a whole number by a decimal • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Describes the effects of multiplying a number by a number between 0 and 1*	• Evaluates expressions using the order of operations, including exponents (whole numbers only) • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Evaluates expressions using the order of operations, including exponents (using integers)*

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• Multiplies a decimal by a decimal (factors to hundredths) • Multiplies a decimal by 10, 100, 1000 • Multiplies a decimal by a decimal (factors to thousandths) • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Multiplies integers with unlike signs* • Uses a number line to determine the midpoint between a positive and negative number* • Divides integers with unlike signs* • Solves real-world problems involving multiplication and division of integers*	• Multiplies integers with like signs* • Divides integers with like signs* • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Multiplies rational expressions* • Divides rational expressions in a/b form* • Calculates sums combining fractions, decimals, and percents	
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what) • Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals* • Solves complex problems involving miles per gallon • Solves complex problems involving miles/kilometers per hour*	• Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease* • Solves problems involving tax and tips • Calculates commission/deductions and total pay • Solves complex problems involving miles per gallon • Solves problems comparing unit prices	• Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
• Calculates the value of a power (e.g., 2^3 = 8)	• Calculates the power of a number (e.g., 8 = 2^3) • Evaluates expressions containing powers (e.g., 3^2 x 2^3) • Applies rules for multiplying and dividing powers • Calculates the positive square root of a perfect square • Solves problems with scientific notation* • Simplifies rational expressions with absolute value	• Simplifies rational expressions with exponents* • Estimates the square roots of numbers • Simplifies rational expressions with scientific notation • Solves problems with scientific notation*
New Vocabulary: absolute value, borrow, common denominator, cord, expanded notation, exponent, half	*New Vocabulary:* commission, cubed, discount, equality, prime factor, prime factorization, representative sample,	*New Vocabulary:* feet per second, least common multiple

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hour, least common denominator, lowest common denominator, range, real number, short, tax, ten million, ten thousandth, tenths, thousandths, whole	scientific notation, tenth power	
New Signs and Symbols: gal gallon, I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, : used with time	*New Signs and Symbols:* [ ] square brackets, || absolute value, BC, km kilometer/kilometre, • point, segment overbar, square root symbol, – subtraction	*New Signs and Symbols:* LCM lowest common multiple, sec second

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Number	**Number**	**Number**
• Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Orders rational numbers, in a/b form* • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents • Orders fractions, decimals, and integers on a number line* • Determines the prime factorization of a number • Applies rules of divisibility by 3's* • Applies rules of divisibility • Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Compares numbers written exponentially • Uses correct terminology for powers* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation	• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)* • Determines the prime factorization of a number using powers • Uses factor and multiple concepts to solve difficult problems • Identifies the least common multiple of whole numbers* • Identifies the greatest common factor and least common multiple of multiple whole numbers* • Identifies the ratio from a given real-world situation* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation • Writes a decimal in scientific notation*	• Expresses a percent over 100 or under 1 as a fraction in lowest terms and vice versa* • Uses factor and multiple concepts to solve difficult problems • Uses prime and relatively prime concepts to solve problems* • Solves problems using multiple number theory concepts (e.g., prime, GCF and LCM, multiples, factors) • Uses fractional and negative exponents as optional ways of representing problem situations (e.g., 27^2/3 = (27^1/3)^2 = 9)* • Writes a rational number in scientific notation*

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• Writes a decimal in scientific notation* • Represents absolute value using positive and negative numbers*		
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally • Adds integers with unlike signs • Adds several positive and negative integers • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)* • Subtracts rational expressions in decimal form*	• Uses a number line to determine the distance between a positive and negative number • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)*	
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers* • Evaluates numerical expressions using the order of operations (whole numbers only) • Evaluates expressions using the order of operations, including exponents (whole numbers only) • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number • Uses models to multiply and divide fractions and connect the actions to algorithms* • Multiplies mixed fractions • Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms* • Divides a fraction by a fraction • Divides a fraction by a whole number	• Evaluates expressions using the order of operations, including exponents (whole numbers only) • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Evaluates expressions using the order of operations, including exponents (using integers)*	

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• Divides a whole number by a fraction* • Divides a mixed fraction by a whole number* • Divides a whole number by a mixed fraction* • Divides a mixed fraction by a fraction • Divides a fraction by a mixed fraction* • Divides a mixed fraction by a mixed fraction • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions)* • Multiplies a decimal by 10, 100, 1000 • Divides a whole number by a decimal • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Solves difficult real-world problems involving decimals (e.g., multiple multiplications, conversions) • Describes the effects of multiplying a number by a number between 0 and 1* • Multiplies integers with like signs* • Divides integers with like signs* • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Multiplies rational expressions* • Divides rational expressions in a/b form* • Calculates sums combining fractions, decimals, and percents		
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease* • Solves problems involving tax and tips	• Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*

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• Calculates commission/deductions and total pay • Solves complex problems involving miles per gallon • Solves problems comparing unit prices	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*	
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
• Calculates the power of a number (e.g., 8 = 2^3) • Evaluates expressions containing powers (e.g., 3^2 x 2^3) • Applies rules for multiplying and dividing powers • Calculates the positive square root of a perfect square • Solves problems with scientific notation* • Simplifies rational expressions with absolute value	• Simplifies rational expressions with exponents* • Estimates the square roots of numbers • Simplifies rational expressions with scientific notation • Solves problems with scientific notation*	• Simplifies rational expressions with exponents* • Solves problems with scientific notation*
New Vocabulary: commission, cubed, discount, equality, prime factor, prime factorization, representative sample, scientific notation, tenth power	*New Vocabulary:* feet per second, least common multiple	*New Vocabulary:* none
New Signs and Symbols: [ ] square brackets, || absolute value, BC, km kilometer/kilometre, • point, segment overbar, square root symbol, – subtraction	*New Signs and Symbols:* LCM lowest common multiple, sec second	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce 261 - 270
Number	**Number**	**Number**
• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)* • Determines the prime factorization of a number using powers • Uses factor and multiple concepts to solve difficult problems • Identifies the least common multiple of whole numbers* • Identifies the greatest common factor and least common multiple of multiple whole numbers* • Identifies the ratio from a given real-world situation* • Writes a number expressed in scientific notation in standard form* • Writes a whole number in scientific notation • Writes a decimal in scientific notation*	• Expresses a percent over 100 or under 1 as a fraction in lowest terms and vice versa* • Uses factor and multiple concepts to solve difficult problems • Uses prime and relatively prime concepts to solve problems* • Solves problems using multiple number theory concepts (e.g., prime, GCF and LCM, multiples, factors) • Uses fractional and negative exponents as optional ways of representing problem situations (e.g., 27^2/3 = (27^1/3)^2 = 9)* • Writes a rational number in scientific notation*	• Defines "irrational numbers"*
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
• Uses a number line to determine the distance between a positive and negative number • Subtracts integers* • Solves real-world problems involving addition and subtraction of integers (analysis)*		
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
• Evaluates expressions using the order of operations, including exponents (whole numbers only) • Solves real-world problems involving multiplication and division of integers (analysis)* • Evaluates numerical expressions using the order of operations (using integers)* • Evaluates expressions using the order of operations, including exponents (using integers)*		
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90)	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving rates*

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• Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*		
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
• Simplifies rational expressions with exponents* • Estimates the square roots of numbers • Simplifies rational expressions with scientific notation • Solves problems with scientific notation*	• Simplifies rational expressions with exponents* • Solves problems with scientific notation*	• Simplifies rational expressions with negative exponents
New Vocabulary: feet per second, least common multiple	*New Vocabulary:* none	*New Vocabulary:* non-repeating decimal, rational number, repeating, repeating decimal
New Signs and Symbols: LCM lowest common multiple, sec second	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: 261 - 270

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop 261 - 270	Skills and Concepts to Introduce Above 270
Number	**Number**	**Number**
• Expresses a percent over 100 or under 1 as a fraction in lowest terms and vice versa* • Uses factor and multiple concepts to solve difficult problems • Uses prime and relatively prime concepts to solve problems* • Solves problems using multiple number theory concepts (e.g., prime, GCF and LCM, multiples, factors) • Uses fractional and negative exponents as optional ways of representing problem situations (e.g., 27^2/3 = (27^1/3)^2 = 9)* • Writes a rational number in scientific notation*	• Defines "irrational numbers"*	• Identifies the least common multiple of numbers in their prime factored state*
Operations: Add and Subtract	**Operations: Add and Subtract**	**Operations: Add and Subtract**
Operations: Multiply and Divide	**Operations: Multiply and Divide**	**Operations: Multiply and Divide**
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)*	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving rates*	
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**	**Powers, Roots, and Absolute Value**
• Simplifies rational expressions with exponents* • Solves problems with scientific notation*	• Simplifies rational expressions with negative exponents	
New Vocabulary: none	*New Vocabulary:* non-repeating decimal, rational number, repeating, repeating decimal	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number and Operations
RIT Score Range: Above 270

Skills and Concepts to Enhance 261 - 270	Skills and Concepts to Develop Above 270
Number	**Number**
• Defines "irrational numbers"*	• Identifies the least common multiple of numbers in their prime factored state*
Operations: Add and Subtract	**Operations: Add and Subtract**
Operations: Multiply and Divide	**Operations: Multiply and Divide**
Ratio, Rates, Proportion, and Percent	**Ratio, Rates, Proportion, and Percent**
• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving rates*	
Powers, Roots, and Absolute Value	**Powers, Roots, and Absolute Value**
• Simplifies rational expressions with negative exponents	
New Vocabulary: non-repeating decimal, rational number, repeating, repeating decimal	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: Below 171

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**
• Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members	• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and horizontal representations are equivalent • Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**
Equations and Inequalities	**Equations and Inequalities**
• Solves basic-facts open sentences - addition and subtraction	• Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*
New Vocabulary: none	*New Vocabulary:* fact family, whole number
New Signs and Symbols: + addition, = is equal to, – subtraction, □ variable	*New Signs and Symbols:* × multiplication

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 171 - 180

Skills and Concepts to Enhance Below 171	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members	• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and horizontal representations are equivalent • Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members	• Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers • Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Completes arithmetic growth patterns in number tables by identifying the missing elements • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Solves basic-facts open sentences - addition and subtraction	• Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*	• Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)
New Vocabulary: none	*New Vocabulary:* fact family, whole number	*New Vocabulary:* even number, factor, odd number, symmetrical
New Signs and Symbols: + addition, = is equal to, – subtraction, □ variable	*New Signs and Symbols:* × multiplication	*New Signs and Symbols:* { } set notation, ÷ division

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and horizontal representations are equivalent • Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members	• Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers • Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Completes arithmetic growth patterns in number tables by identifying the missing elements • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*	• Looks for a simple linear pattern in a table to solve a problem • Distinguishes between odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity) • Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*	• Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)	• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors

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		(numbers 100 and under)* • Solves 2-step open sentences with missing addends*
New Vocabulary: fact family, whole number	*New Vocabulary:* even number, factor, odd number, symmetrical	*New Vocabulary:* zero
New Signs and Symbols: × multiplication	*New Signs and Symbols:* { } set notation, ÷ division	*New Signs and Symbols:* none

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers • Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Completes arithmetic growth patterns in number tables by identifying the missing elements • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*	• Looks for a simple linear pattern in a table to solve a problem • Distinguishes between odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity) • Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*	• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Solves real-world problems using reasoning strategies • Demonstrates an understanding of the associative property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure • Uses mapping diagrams to represent functions*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
		• Uses basic operations on algebraic expressions (uses correct order of operations)*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Equations and Inequalities	Equations and Inequalities	Equations and Inequalities
• Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)	• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends*	• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Describes a realistic situation using information given in a linear equation* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence
New Vocabulary: even number, factor, odd number, symmetrical	*New Vocabulary:* zero	*New Vocabulary:* commutative, half-dollar, inverse operation, minimum
New Signs and Symbols: { } set notation, ÷ division	*New Signs and Symbols:* none	*New Signs and Symbols:* ( ) order of operations, ( ) ordered pair, ¢ cent sign, $ dollar sign, - negative number, + addition, = is equal to

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Looks for a simple linear pattern in a table to solve a problem • Distinguishes between odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity) • Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*	• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Solves real-world problems using reasoning strategies • Demonstrates an understanding of the associative property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure • Uses mapping diagrams to represent functions*	• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the inverse relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Demonstrates an understanding that division by 0 is undefined* • Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output* • Uses mapping diagrams to represent functions* • Solves problems involving simple functions*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
	• Uses basic operations on algebraic expressions (uses correct order of operations)*	• Uses basic operations on algebraic expressions (uses correct order of operations)*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

Equations and Inequalities	Equations and Inequalities	Equations and Inequalities
• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends*	• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Describes a realistic situation using information given in a linear equation* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence	• Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Applies algebraic methods to solve theoretical problems
New Vocabulary: zero	*New Vocabulary:* commutative, half-dollar, inverse operation, minimum	*New Vocabulary:* negative, positive, proof, triple
New Signs and Symbols: none	*New Signs and Symbols:* ( ) order of operations, ( ) ordered pair, ¢ cent sign, $ dollar sign, - negative number, + addition, = is equal to	*New Signs and Symbols:* a.m., $ dollar sign, °F degrees Fahrenheit, ? next in sequence

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Solves real-world problems using reasoning strategies • Demonstrates an understanding of the associative property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure • Uses mapping diagrams to represent functions*	• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the inverse relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Demonstrates an understanding that division by 0 is undefined* • Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output* • Uses mapping diagrams to represent functions* • Solves problems involving simple functions*	• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties • Uses the distributive property • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0) • Uses mapping diagrams to represent functions* • Completes a function table according to a rule* • Investigates and describes functional relationships of geometric figures (e.g., area is a function of the radius)* • Solves problems involving simple functions*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
• Uses basic operations on algebraic expressions (uses correct order of operations)*	• Uses basic operations on algebraic expressions (uses correct order of operations)*	• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation* • Uses basic operations on algebraic expressions

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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		(substituting for unknowns) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression • Uses basic operations on algebraic expressions (uses correct order of operations)*
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Writes the missing number in a proportion using basic facts • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Describes a realistic situation using information given in a linear equation* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence	• Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Applies algebraic methods to solve theoretical problems	• Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Expresses a simple linear equation from a contextual situation • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations using substitution • Writes equivalent forms of algebraic equations using addition and subtraction • Solves open sentences with decimals • Solves linear equations in a real-world context using a given formula* • Solves open sentences with integers* • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems* • Solves simple one-step inequality open sentences* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)*
New Vocabulary: commutative, half-dollar, inverse operation, minimum	*New Vocabulary:* negative, positive, proof, triple	*New Vocabulary:* algebra, associative, distributive, reflexive, substitution, transitive
New Signs and Symbols: ( ) order of operations, ( ) ordered pair, ¢ cent sign, $ dollar sign, - negative number, + addition, = is equal to	*New Signs and Symbols:* a.m., $ dollar sign, °F degrees Fahrenheit, ? next in sequence	*New Signs and Symbols:* ( ) parenthesis around an integer, > greater than, ∩ intersection, < less than, ∅ null or empty set, + positive number, repeating decimal overbar, Δ triangle

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the inverse relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families* • Uses the commutative property of addition with rational numbers* • Demonstrates an understanding that division by 0 is undefined* • Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output* • Uses mapping diagrams to represent functions* • Solves problems involving simple functions*	• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties • Uses the distributive property • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0) • Uses mapping diagrams to represent functions* • Completes a function table according to a rule* • Investigates and describes functional relationships of geometric figures (e.g., area is a function of the radius)* • Solves problems involving simple functions*	• Identifies the distributive property* • Uses the distributive property • Applies the rule to determine which number does not belong - growing pattern: arithmetic* • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Represents real-world functions using an equation • Uses tables to determine function equations • Completes a function table according to a rule* • Models real life functions using function notation* • Identifies the graph type, given equations of linear and nonlinear functions* • Solves problems involving simple functions*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
• Uses basic operations on algebraic expressions (uses correct order of operations)*	• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation* • Uses basic operations on algebraic expressions	• Uses expressions to represent situations that involve variable quantities with exponents* • Uses basic operations on algebraic expressions

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

	(substituting for unknowns) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression • Uses basic operations on algebraic expressions (uses correct order of operations)*	(substituting for unknowns) • Uses basic operations on algebraic expressions (substituting for unknown exponents) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Applies algebraic methods to solve theoretical problems	• Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Expresses a simple linear equation from a contextual situation • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations using substitution • Writes equivalent forms of algebraic equations using addition and subtraction • Solves open sentences with decimals • Solves linear equations in a real-world context using a given formula* • Solves open sentences with integers* • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems* • Solves simple one-step inequality open sentences* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)*	• Expresses a simple linear equation from a contextual situation • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations with fractions • Solves open sentences with integers* • Solves linear equations using rational numbers* • Applies algebraic methods to solve real-world problems* • Writes the equation of a horizontal or vertical line when given the graph of the line* • Determines the graph of a horizontal or vertical line when given the equation* • Determines slope from a linear equation* • Expresses a simple linear inequality from a contextual situation • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves simple linear inequalities using graphs*
New Vocabulary: negative, positive, proof, triple	*New Vocabulary:* algebra, associative, distributive, reflexive, substitution, transitive	*New Vocabulary:* algebraic sentence, arithmetic progression, equation of a line, identity element, is less than, linear graph, mathematical sentence
New Signs and Symbols: a.m., $ dollar sign, °F degrees Fahrenheit, ? next in sequence	*New Signs and Symbols:* ( ) parenthesis around an integer, > greater than, ∩ intersection, < less than, ∅ null or empty set, + positive number, repeating decimal overbar, Δ triangle	*New Signs and Symbols:* -, f(x) the value of the function f at x, ≥ greater than or equal to, ≤ less than or equal to, • multiplication symbol (dot), – subtraction, > greater than

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Looks for a growing pattern to solve a problem • Solves real-world problems using reasoning strategies • Recognizes characteristics of odd and even numbers • Demonstrates an understanding of the commutative property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties • Uses the distributive property • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Demonstrates an understanding of properties (e.g., commutative, associative, distributive, properties of 0) • Uses mapping diagrams to represent functions* • Completes a function table according to a rule* • Investigates and describes functional relationships of geometric figures (e.g., area is a function of the radius)* • Solves problems involving simple functions*	• Identifies the distributive property* • Uses the distributive property • Applies the rule to determine which number does not belong - growing pattern: arithmetic* • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Represents real-world functions using an equation • Uses tables to determine function equations • Completes a function table according to a rule* • Models real life functions using function notation* • Identifies the graph type, given equations of linear and nonlinear functions* • Solves problems involving simple functions*	• Uses reasoning strategies to solve problems* • Identifies the associative property of addition* • Uses the multiplicative inverse property with rational numbers* • Represents growing arithmetic patterns using algebraic expressions or equations* • Uses an algebraic expression to represent a triangular number pattern* • Uses tables to determine function equations • Completes a function table according to a rule (rational numbers)* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation* • Uses basic operations on algebraic expressions (substituting for unknowns) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression • Uses basic operations on algebraic expressions (uses correct order of operations)*	• Uses expressions to represent situations that involve variable quantities with exponents* • Uses basic operations on algebraic expressions (substituting for unknowns) • Uses basic operations on algebraic expressions (substituting for unknown exponents) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression	• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers • Evaluates absolute-value algebraic expressions using substitution strategies*
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Expresses a simple linear equation from a contextual	• Expresses a simple linear equation from a contextual situation • Solves 2-step open sentences with missing factors	• Uses linear equations to represent situations involving variable quantities • Solves 2-step open sentences with missing factors

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situation • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Solves 1-step linear equations • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations using substitution • Writes equivalent forms of algebraic equations using addition and subtraction • Solves open sentences with decimals • Solves linear equations in a real-world context using a given formula* • Solves open sentences with integers* • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems* • Solves simple one-step inequality open sentences* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)*	(variables on both sides of the sentence)* • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations with fractions • Solves open sentences with integers* • Solves linear equations using rational numbers* • Applies algebraic methods to solve real-world problems* • Writes the equation of a horizontal or vertical line when given the graph of the line* • Determines the graph of a horizontal or vertical line when given the equation* • Determines slope from a linear equation* • Expresses a simple linear inequality from a contextual situation • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves simple linear inequalities using graphs*	(variables on both sides of the sentence)* • Solves linear equations with fractions • Solves linear equations using rational numbers* • Solves open sentences with fractions • Applies algebraic methods to solve real-world problems* • Applies algebraic methods to solve a variety of real-world and theoretical problems • Writes linear equations when given ordered pairs* • Determines slope from a linear equation* • Recognizes the slope of horizontal and vertical lines* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves linear inequalities using graphs
New Vocabulary: algebra, associative, distributive, reflexive, substitution, transitive	*New Vocabulary:* algebraic sentence, arithmetic progression, equation of a line, identity element, is less than, linear graph, mathematical sentence	*New Vocabulary:* function table, number sequence, x-axis
New Signs and Symbols: ( ) parenthesis around an integer, > greater than, ∩ intersection, < less than, ∅ null or empty set, + positive number, repeating decimal overbar, Δ triangle	*New Signs and Symbols:* -, f(x) the value of the function f at x, ≥ greater than or equal to, ≤ less than or equal to, • multiplication symbol (dot), – subtraction, > greater than	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Identifies the distributive property* • Uses the distributive property • Applies the rule to determine which number does not belong - growing pattern: arithmetic* • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes commutative, associative, distributive, symmetric, transitive, and reflexive properties* • Represents real-world functions using an equation • Uses tables to determine function equations • Completes a function table according to a rule* • Models real life functions using function notation* • Identifies the graph type, given equations of linear and nonlinear functions* • Solves problems involving simple functions*	• Uses reasoning strategies to solve problems* • Identifies the associative property of addition* • Uses the multiplicative inverse property with rational numbers* • Represents growing arithmetic patterns using algebraic expressions or equations* • Uses an algebraic expression to represent a triangular number pattern* • Uses tables to determine function equations • Completes a function table according to a rule (rational numbers)* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation*	• Uses reasoning strategies to solve problems* • Draws a simple valid conclusion from a given if ... then statement and a minor premise* • Identifies the commutative property of multiplication* • Uses the additive inverse property with rational numbers* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation* • Distinguishes between linear and nonlinear functions (analysis) • Uses graphs to represent functions and interpret slope*
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
• Uses expressions to represent situations that involve variable quantities with exponents* • Uses basic operations on algebraic expressions (substituting for unknowns) • Uses basic operations on algebraic expressions (substituting for unknown exponents) • Writes equivalent forms of algebraic expressions (e.g., $(x + 3)/2 = x/2 + 3/2$)* • Represents relationships of quantities in the form of an expression	• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers • Evaluates absolute-value algebraic expressions using substitution strategies*	• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Expresses a simple linear equation from a contextual situation • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Solves 2-step linear equations* • Solves linear equations with decimals* • Solves linear equations with integers • Solves linear equations with fractions	• Uses linear equations to represent situations involving variable quantities • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Solves linear equations with fractions • Solves linear equations using rational numbers* • Solves open sentences with fractions • Applies algebraic methods to solve real-world	• Writes equivalent forms of algebraic equations using multiplication and division • Solves linear equations using rational numbers* • Applies algebraic methods to solve complex real-world and theoretical problems • Determines slope from graphs • Solves single variable linear inequalities with variable in both members using number lines

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• Solves open sentences with integers* • Solves linear equations using rational numbers* • Applies algebraic methods to solve real-world problems* • Writes the equation of a horizontal or vertical line when given the graph of the line* • Determines the graph of a horizontal or vertical line when given the equation* • Determines slope from a linear equation* • Expresses a simple linear inequality from a contextual situation • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves simple linear inequalities using graphs*	problems* • Applies algebraic methods to solve a variety of real-world and theoretical problems • Writes linear equations when given ordered pairs* • Determines slope from a linear equation* • Recognizes the slope of horizontal and vertical lines* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves linear inequalities using graphs	
New Vocabulary: algebraic sentence, arithmetic progression, equation of a line, identity element, is less than, linear graph, mathematical sentence	*New Vocabulary:* function table, number sequence, x-axis	*New Vocabulary:* x-coordinate, y-coordinate
New Signs and Symbols: -, f(x) the value of the function f at x, ≥ greater than or equal to, ≤ less than or equal to, • multiplication symbol (dot), – subtraction, > greater than	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**	**Patterns, Relations, and Functions**
• Uses reasoning strategies to solve problems* • Identifies the associative property of addition* • Uses the multiplicative inverse property with rational numbers* • Represents growing arithmetic patterns using algebraic expressions or equations* • Uses an algebraic expression to represent a triangular number pattern* • Uses tables to determine function equations • Completes a function table according to a rule (rational numbers)* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation*	• Uses reasoning strategies to solve problems* • Draws a simple valid conclusion from a given if ... then statement and a minor premise* • Identifies the commutative property of multiplication* • Uses the additive inverse property with rational numbers* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation* • Distinguishes between linear and nonlinear functions (analysis) • Uses graphs to represent functions and interpret slope*	
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**	**Symbols, Variables, and Expressions**
• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers • Evaluates absolute-value algebraic expressions using substitution strategies*	• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers	
Equations and Inequalities	**Equations and Inequalities**	**Equations and Inequalities**
• Uses linear equations to represent situations involving variable quantities • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Solves linear equations with fractions • Solves linear equations using rational numbers* • Solves open sentences with fractions • Applies algebraic methods to solve real-world problems* • Applies algebraic methods to solve a variety of real-world and theoretical problems • Writes linear equations when given ordered pairs*	• Writes equivalent forms of algebraic equations using multiplication and division • Solves linear equations using rational numbers* • Applies algebraic methods to solve complex real-world and theoretical problems • Determines slope from graphs • Solves single variable linear inequalities with variable in both members using number lines	• Determines x- or y-intercept of a given linear equation*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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• Determines slope from a linear equation* • Recognizes the slope of horizontal and vertical lines* • Describes the relationship or a real-world situation represented by a simple linear inequality (e.g., 1- or 2-step)* • Solves linear inequalities using graphs		
New Vocabulary: function table, number sequence, x-axis	*New Vocabulary:* x-coordinate, y-coordinate	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: Above 260

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
Patterns, Relations, and Functions	**Patterns, Relations, and Functions**
• Uses reasoning strategies to solve problems* • Draws a simple valid conclusion from a given if ... then statement and a minor premise* • Identifies the commutative property of multiplication* • Uses the additive inverse property with rational numbers* • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation* • Distinguishes between linear and nonlinear functions (analysis) • Uses graphs to represent functions and interpret slope*	
Symbols, Variables, and Expressions	**Symbols, Variables, and Expressions**
• Uses expressions to represent situations that involve variable quantities with exponents* • Evaluates expressions by substituting with rational numbers	
Equations and Inequalities	**Equations and Inequalities**
• Writes equivalent forms of algebraic equations using multiplication and division • Solves linear equations using rational numbers* • Applies algebraic methods to solve complex real-world and theoretical problems • Determines slope from graphs • Solves single variable linear inequalities with variable in both members using number lines	• Determines x- or y-intercept of a given linear equation*
New Vocabulary: x-coordinate, y-coordinate	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**
	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies bases of a cylinder* • Identifies and names a cone • Compares open and closed figures* • Sorts solid figures and objects according to attributes*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**
• Identifies figures that are the same size and shape • Predicts the shape after unfolding a figure*	• Identifies figures that are the same size and shape
New Vocabulary: size	*New Vocabulary:* corner, flat
New Signs and Symbols: none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies bases of a cylinder* • Identifies and names a cone • Compares open and closed figures* • Sorts solid figures and objects according to attributes*	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube • Recognizes geometric shapes in real-world objects
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
		• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies figures that are the same size and shape • Predicts the shape after unfolding a figure*	• Identifies figures that are the same size and shape	• Identifies figures that are similar
New Vocabulary: size	*New Vocabulary:* corner, flat	*New Vocabulary:* geometric figure, ray, similar
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* ? next in sequence

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies bases of a cylinder* • Identifies and names a cone • Compares open and closed figures* • Sorts solid figures and objects according to attributes*	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube • Recognizes geometric shapes in real-world objects	• Identifies points on a line* • Identifies congruent line segments* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
	• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*	• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies figures that are the same size and shape	• Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)*
New Vocabulary: corner, flat	*New Vocabulary:* geometric figure, ray, similar	*New Vocabulary:* clockwise, flip, grid, line of symmetry, rotation, symmetry, turn
New Signs and Symbols: none	*New Signs and Symbols:* ? next in sequence	*New Signs and Symbols:* ( ) ordered pair, • point

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube • Recognizes geometric shapes in real-world objects	• Identifies points on a line* • Identifies congruent line segments* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*	• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Identifies position of shapes (e.g., inside, outside, between)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)*	• Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures • Explores maps and relates them to measurements of real distances, using the scale* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)
New Vocabulary: geometric figure, ray, similar	*New Vocabulary:* clockwise, flip, grid, line of symmetry, rotation, symmetry, turn	*New Vocabulary:* face, intersect, kite, large, parallel, plane, same shape, scale, straight, vertical line
New Signs and Symbols: ? next in sequence	*New Signs and Symbols:* ( ) ordered pair, • point	*New Signs and Symbols:* = is equal to, • multiplication symbol (dot)

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies points on a line* • Identifies congruent line segments* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape*	• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Identifies position of shapes (e.g., inside, outside, between)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)*	• Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures • Explores maps and relates them to measurements of real distances, using the scale* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)	• Classifies plane figures by the number of lines of symmetry* • Defines transformations*
New Vocabulary: clockwise, flip, grid, line of symmetry,	*New Vocabulary:* face, intersect, kite, large, parallel, plane,	*New Vocabulary:* coordinate, coordinate point, edge,

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rotation, symmetry, turn	same shape, scale, straight, vertical line	larger, mirror image, origin, parallel line, rectangular box, regular polygon, trapezoid
New Signs and Symbols: ( ) ordered pair, • point	*New Signs and Symbols:* = is equal to, • multiplication symbol (dot)	*New Signs and Symbols:* ↔ line symbol

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape*	• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Predicts and verifies the effects of combining or subdividing basic shapes • Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Identifies position of shapes (e.g., inside, outside, between)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*	• Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures	• Classifies plane figures by the number of lines of symmetry* • Defines transformations*	• Identifies similar and congruent triangles* • Identifies congruent polygons and their corresponding sides and angles*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

• Explores maps and relates them to measurements of real distances, using the scale* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)		• Defines "similarity"* • Recognizes similar figures in the real world* • Determines an appropriate scale for representing a distance on a map* • Uses similar figures to construct ratios and solve for a missing side* • Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*
New Vocabulary: face, intersect, kite, large, parallel, plane, same shape, scale, straight, vertical line	*New Vocabulary:* coordinate, coordinate point, edge, larger, mirror image, origin, parallel line, rectangular box, regular polygon, trapezoid	*New Vocabulary:* acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, transformation, union
New Signs and Symbols: = is equal to, • multiplication symbol (dot)	*New Signs and Symbols:* ↔ line symbol	*New Signs and Symbols:* ∠ angle, angle marker (arc), ° degrees, mm millimeter/millimetre, right angle marker, segment overbar

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Predicts and verifies the effects of combining or subdividing basic shapes • Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)*	• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies properties of parallel and perpendicular lines • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Identifies properties of quadrilaterals* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*	• Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*	• Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)* • Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Classifies plane figures by the number of lines of	• Identifies similar and congruent triangles*	• Uses similarity to solve problems using scale drawings

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symmetry* • Defines transformations*	• Identifies congruent polygons and their corresponding sides and angles* • Defines "similarity"* • Recognizes similar figures in the real world* • Determines an appropriate scale for representing a distance on a map* • Uses similar figures to construct ratios and solve for a missing side* • Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*	• Uses similar figures to construct ratios and solve for a missing side* • Uses similar triangles to construct ratios and solve for a missing side • Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*
New Vocabulary: coordinate, coordinate point, edge, larger, mirror image, origin, parallel line, rectangular box, regular polygon, trapezoid	*New Vocabulary:* acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, transformation, union	*New Vocabulary:* arc, center, central angle, complementary angle, congruent side, equilateral triangle, interior angle, isosceles triangle, long, midpoint, obtuse triangle, scalene triangle, sum of measures
New Signs and Symbols: ↔ line symbol	*New Signs and Symbols:* ∠ angle, angle marker (arc), ° degrees, mm millimeter/millimetre, right angle marker, segment overbar	*New Signs and Symbols:* ( ) order of operations, cm centimeter/centimetre, ' feet, in. inch, " inches, m meter/metre, - negative number, parallel symbol, π pi, : ratio, × multiplication, = is equal to

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Predicts and verifies the effects of combining or subdividing basic shapes • Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)*	• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies properties of parallel and perpendicular lines • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Identifies properties of quadrilaterals* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*	• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Identifies properties of circles • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Identifies the components of the Pythagorean theorem*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system* • Locates the origin on a coordinate grid*	• Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)* • Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies similar and congruent triangles*	• Uses similarity to solve problems using scale drawings	• Identifies properties of congruent triangles*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

• Identifies congruent polygons and their corresponding sides and angles* • Defines "similarity"* • Recognizes similar figures in the real world* • Determines an appropriate scale for representing a distance on a map* • Uses similar figures to construct ratios and solve for a missing side* • Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*	• Uses similar figures to construct ratios and solve for a missing side* • Uses similar triangles to construct ratios and solve for a missing side • Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*	• Solves problems involving properties of congruent triangles • Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing* • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations)
New Vocabulary: acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, transformation, union	*New Vocabulary:* arc, center, central angle, complementary angle, congruent side, equilateral triangle, interior angle, isosceles triangle, long, midpoint, obtuse triangle, scalene triangle, sum of measures	*New Vocabulary:* acute triangle, chord, corresponding side, equiangular triangle, secant, shorter, square pyramid, tangent
New Signs and Symbols: ∠ angle, angle marker (arc), ° degrees, mm millimeter/millimetre, right angle marker, segment overbar	*New Signs and Symbols:* ( ) order of operations, cm centimeter/centimetre, ' feet, in. inch, " inches, m meter/metre, - negative number, parallel symbol, π pi, : ratio, × multiplication, = is equal to	*New Signs and Symbols:* congruent segment symbol, ft feet, ≅ is congruent to, Δ triangle

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies properties of parallel and perpendicular lines • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Identifies properties of quadrilaterals* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*	• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Identifies properties of circles • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Identifies the components of the Pythagorean theorem*	• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Uses properties of angles and figures to solve algebraic problems* • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Identifies corresponding and alternate exterior/interior angles • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere* • Uses the Pythagorean theorem to solve problems
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)* • Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Determines the distance between two points* • Determines the midpoint of a line on a coordinate grid* • Determines the figure when plotting ordered pairs • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Uses similarity to solve problems using scale drawings • Uses similar figures to construct ratios and solve for a missing side*	• Identifies properties of congruent triangles* • Solves problems involving properties of congruent triangles	• Constructs congruent figures* • Identifies properties of similar figures* • Determines the new coordinates of a transformed

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• Uses similar triangles to construct ratios and solve for a missing side • Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)*	• Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing* • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations)	geometric figure
New Vocabulary: arc, center, central angle, complementary angle, congruent side, equilateral triangle, interior angle, isosceles triangle, long, midpoint, obtuse triangle, scalene triangle, sum of measures	*New Vocabulary:* acute triangle, chord, corresponding side, equiangular triangle, secant, shorter, square pyramid, tangent	*New Vocabulary:* adjacent angle, congruent triangle, construction, incline, infinite, Pythagorean theorem, transversal, x-axis, y-axis
New Signs and Symbols: ( ) order of operations, cm centimeter/centimetre, ' feet, in. inch, " inches, m meter/metre, - negative number, parallel symbol, π pi, : ratio, × multiplication, = is equal to	*New Signs and Symbols:* congruent segment symbol, ft feet, ≅ is congruent to, Δ triangle	*New Signs and Symbols:* + addition, km kilometer/kilometre, < less than, m measure of angle, / per, → ray symbol, s second (SI metric), square root symbol

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Identifies properties of circles • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Identifies the components of the Pythagorean theorem*	• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Uses properties of angles and figures to solve algebraic problems* • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Identifies corresponding and alternate exterior/interior angles • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere* • Uses the Pythagorean theorem to solve problems	• Uses reasoning to verify properties of parallel and perpendicular lines • Defines the properties or relationships between planes, including parallel, perpendicular, and intersecting planes and their angles of incidence* • Identifies properties of congruent angles* • Uses properties of angles and figures to solve algebraic problems* • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes and uses medians in triangles* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Solves problems involving properties of triangles • Identifies and names a rhombus* • Classifies polygons by properties • Uses the Pythagorean theorem to solve problems
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Graphs ordered pairs in all quadrants • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Determines the distance between two points* • Determines the midpoint of a line on a coordinate grid* • Determines the figure when plotting ordered pairs • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Determines the midpoint of a line on a coordinate grid* • Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Identifies properties of congruent triangles* • Solves problems involving properties of congruent triangles	• Constructs congruent figures* • Identifies properties of similar figures* • Determines the new coordinates of a transformed	• Verifies congruency of triangles using ASA, SAS, SSS, or AAS • Determines symmetry with respect to a point or line of

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• Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing* • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations)	geometric figure	a figure under transformation* • Solves problems involving similar polygons (not triangles) • Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify corresponding parts of symmetric plane figures* • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines whether a given pattern or polygon will tessellate*
New Vocabulary: acute triangle, chord, corresponding side, equiangular triangle, secant, shorter, square pyramid, tangent	*New Vocabulary:* adjacent angle, congruent triangle, construction, incline, infinite, Pythagorean theorem, transversal, x-axis, y-axis	*New Vocabulary:* collinear, isosceles trapezoid, line symmetry, point symmetry, regular hexagon, regular pentagon, rotational symmetry
New Signs and Symbols: congruent segment symbol, ft feet, ≅ is congruent to, Δ triangle	*New Signs and Symbols:* + addition, km kilometer/kilometre, < less than, m measure of angle, / per, → ray symbol, s second (SI metric), square root symbol	*New Signs and Symbols:* AAA angle angle angle, AAS angle angle side, ASA angle side angle, parallel line arrow markers, ⊥ perpendicular to, SAS side angle side, ~ similar to, SSA side side angle, SSS side side side, ° degrees

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**	**Two- and Three-Dimensional Shapes**
• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Uses properties of angles and figures to solve algebraic problems* • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles* • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Identifies corresponding and alternate exterior/interior angles • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere* • Uses the Pythagorean theorem to solve problems	• Uses reasoning to verify properties of parallel and perpendicular lines • Defines the properties or relationships between planes, including parallel, perpendicular, and intersecting planes and their angles of incidence* • Identifies properties of congruent angles* • Uses properties of angles and figures to solve algebraic problems* • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes and uses medians in triangles* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Solves problems involving properties of triangles • Identifies and names a rhombus* • Classifies polygons by properties • Uses the Pythagorean theorem to solve problems	• Uses properties of angles to solve mathematical problems*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**	**Spatial Reasoning and Coordinate Geometry**
• Determines the distance between two points* • Determines the midpoint of a line on a coordinate grid* • Determines the figure when plotting ordered pairs • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)* • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)*	• Determines the midpoint of a line on a coordinate grid* • Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint	
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**	**Transformations, Congruency, Symmetry, Similarity**
• Constructs congruent figures* • Identifies properties of similar figures* • Determines the new coordinates of a transformed	• Verifies congruency of triangles using ASA, SAS, SSS, or AAS • Determines symmetry with respect to a point or line of	

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geometric figure	a figure under transformation* • Solves problems involving similar polygons (not triangles) • Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify corresponding parts of symmetric plane figures* • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines whether a given pattern or polygon will tessellate*	
New Vocabulary: adjacent angle, congruent triangle, construction, incline, infinite, Pythagorean theorem, transversal, x-axis, y-axis	*New Vocabulary:* collinear, isosceles trapezoid, line symmetry, point symmetry, regular hexagon, regular pentagon, rotational symmetry	*New Vocabulary:* none
New Signs and Symbols: + addition, km kilometer/kilometre, < less than, m measure of angle, / per, → ray symbol, s second (SI metric), square root symbol	*New Signs and Symbols:* AAA angle angle angle, AAS angle angle side, ASA angle side angle, parallel line arrow markers, ⊥ perpendicular to, SAS side angle side, ~ similar to, SSA side side angle, SSS side side side, ° degrees	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: Above 260

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
Two- and Three-Dimensional Shapes	**Two- and Three-Dimensional Shapes**
• Uses reasoning to verify properties of parallel and perpendicular lines • Defines the properties or relationships between planes, including parallel, perpendicular, and intersecting planes and their angles of incidence* • Identifies properties of congruent angles* • Uses properties of angles and figures to solve algebraic problems* • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Recognizes and uses medians in triangles* • Recognizes the exterior angle relationships of triangles* • Classifies right triangles by defining properties* • Solves problems involving properties of triangles • Identifies and names a rhombus* • Classifies polygons by properties • Uses the Pythagorean theorem to solve problems	• Uses properties of angles to solve mathematical problems*
Spatial Reasoning and Coordinate Geometry	**Spatial Reasoning and Coordinate Geometry**
• Determines the midpoint of a line on a coordinate grid* • Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint	
Transformations, Congruency, Symmetry, Similarity	**Transformations, Congruency, Symmetry, Similarity**
• Verifies congruency of triangles using ASA, SAS, SSS, or AAS • Determines symmetry with respect to a point or line of a figure under transformation* • Solves problems involving similar polygons (not triangles)	

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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• Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify corresponding parts of symmetric plane figures* • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines whether a given pattern or polygon will tessellate*	
New Vocabulary: collinear, isosceles trapezoid, line symmetry, point symmetry, regular hexagon, regular pentagon, rotational symmetry	*New Vocabulary:* none
New Signs and Symbols: AAA angle angle angle, AAS angle angle side, ASA angle side angle, parallel line arrow markers, ⊥ perpendicular to, SAS side angle side, ~ similar to, SSA side side angle, SSS side side side, ° degrees	*New Signs and Symbols:* none

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Adds money vertically with no regrouping* • Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**
Volume and Surface Area	**Volume and Surface Area**
New Vocabulary: none	*New Vocabulary:* shortest
New Signs and Symbols: : used with time	*New Signs and Symbols:* + addition, cm centimeter/centimetre, $ dollar sign, ft feet, • point

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Adds money vertically with no regrouping* • Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• Adds money vertically with no regrouping* • Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour) • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
		• Determines the area of irregular shapes by counting square units*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
New Vocabulary: none	*New Vocabulary:* shortest	*New Vocabulary:* dollar sign, metric, morning
New Signs and Symbols: : used with time	*New Signs and Symbols:* + addition, cm centimeter/centimetre, $ dollar sign, ft feet, • point	*New Signs and Symbols:* a.m., ¢ cent sign, °F degrees Fahrenheit, g gram, = is equal to, p.m.

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Blank cells indicate data are limited or unavailable for this range or document version.

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Adds money vertically with no regrouping* • Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• Adds money vertically with no regrouping* • Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour) • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value	• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00 • Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time

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		• Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Computes simple conversions among units of time (days, weeks)* • Reads Fahrenheit thermometers to the nearest degree*
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
	• Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Compares squares (larger, smaller) • Determines the area of irregular shapes by counting square units*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
		• Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)*
New Vocabulary: shortest	*New Vocabulary:* dollar sign, metric, morning	*New Vocabulary:* changed, clock, cup, estimation, fourth, half past, how much time, measurement, millimeter, noon, o'clock, pennies, pint, quarter past, quarter to, rod, smallest, tablespoon, teaspoon, ton, what time
New Signs and Symbols: + addition, cm centimeter/centimetre, $ dollar sign, ft feet, • point	*New Signs and Symbols:* a.m., ¢ cent sign, °F degrees Fahrenheit, g gram, = is equal to, p.m.	*New Signs and Symbols:* : ratio, c cup, gal gallon, in. inch, pt pint, qt quart, : used with time, tsp teaspoon, □ variable

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Adds money vertically with no regrouping* • Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour) • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value	• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00 • Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time	• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only) • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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	• Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Computes simple conversions among units of time (days, weeks)* • Reads Fahrenheit thermometers to the nearest degree*	• Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Compares squares (larger, smaller) • Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles • Estimates the area of rectangles using square units
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
	• Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)*	• Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Converts between cups and pints* • Converts between cups, pints, and quarts*
New Vocabulary: dollar sign, metric, morning	*New Vocabulary:* changed, clock, cup, estimation, fourth, half past, how much time, measurement, millimeter, noon, o'clock, pennies, pint, quarter past, quarter to, rod, smallest, tablespoon, teaspoon, ton, what time	*New Vocabulary:* approximate, decade, deposit, latest, rise
New Signs and Symbols: a.m., ¢ cent sign, °F degrees Fahrenheit, g gram, = is equal to, p.m.	*New Signs and Symbols:* : ratio, c cup, gal gallon, in. inch, pt pint, qt quart, : used with time, tsp teaspoon, □ variable	*New Signs and Symbols:* °C degrees Celsius, " inches, m meter/metre, yd yard

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00 • Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time	• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only) • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)*	• Finds equivalent combinations of dollars and cents with the same value* • Computes the value of multiple bills and coins (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Converts between milligrams and grams* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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• Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Computes simple conversions among units of time (days, weeks)* • Reads Fahrenheit thermometers to the nearest degree*	• Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature	
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Determines the perimeter of a figure where all sides are labeled • Compares squares (larger, smaller) • Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles • Estimates the area of rectangles using square units	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)*	• Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Converts between cups and pints* • Converts between cups, pints, and quarts*	• Converts between cups and pints* • Converts between cups, pints, and quarts* • Estimates and finds volume of a figure using cubic units
New Vocabulary: changed, clock, cup, estimation, fourth, half past, how much time, measurement, millimeter, noon, o'clock, pennies, pint, quarter past, quarter to, rod, smallest, tablespoon, teaspoon, ton, what time	*New Vocabulary:* approximate, decade, deposit, latest, rise	*New Vocabulary:* cubic centimeter, cubic unit, decameter, decimeter, hectometer, larger, milligram, milliliter
New Signs and Symbols: : ratio, c cup, gal gallon, in. inch, pt pint, qt quart, : used with time, tsp teaspoon, □ variable	*New Signs and Symbols:* °C degrees Celsius, " inches, m meter/metre, yd yard	*New Signs and Symbols:* ∠ angle, ° degrees, ' feet, kg kilogram, m measure of angle, min minute, right angle marker

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only) • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)*	• Finds equivalent combinations of dollars and cents with the same value* • Computes the value of multiple bills and coins (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Converts between milligrams and grams* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)*	• Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with

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• Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature		the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles • Estimates the area of rectangles using square units	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area	• Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Determines the diameter, given the radius, and vice versa* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Converts between cups and pints* • Converts between cups, pints, and quarts*	• Converts between cups and pints* • Converts between cups, pints, and quarts* • Estimates and finds volume of a figure using cubic units	• Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Counts squares to determine surface area of a cube* • Estimates and finds volume of a figure using cubic

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		units
New Vocabulary: approximate, decade, deposit, latest, rise	*New Vocabulary:* cubic centimeter, cubic unit, decameter, decimeter, hectometer, larger, milligram, milliliter	*New Vocabulary:* century, coin, how long, micrometer, protractor
New Signs and Symbols: ° degrees Celsius, " inches, m meter/metre, yd yard	*New Signs and Symbols:* ∠ angle, ° degrees, ' feet, kg kilogram, m measure of angle, min minute, right angle marker	*New Signs and Symbols:* $, ÷ division, fl oz fluid ounce, hr hour, lb pound, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Finds equivalent combinations of dollars and cents with the same value* • Computes the value of multiple bills and coins (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Converts between milligrams and grams* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)*	• Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with	• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours

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	the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*	
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area	• Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Determines the diameter, given the radius, and vice versa* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*	• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Determines the diameter, given the radius, and vice versa* • Defines pi and knows common estimates (3.14 and 22/7)* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Converts between cups and pints* • Converts between cups, pints, and quarts* • Estimates and finds volume of a figure using cubic units	• Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Counts squares to determine surface area of a cube*	• Converts between cups, pints, quarts, and gallons • Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*

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	• Estimates and finds volume of a figure using cubic units	
New Vocabulary: cubic centimeter, cubic unit, decameter, decimeter, hectometer, larger, milligram, milliliter	*New Vocabulary:* century, coin, how long, micrometer, protractor	*New Vocabulary:* cord, cubic meter, cubic millimeter, cubic yard, pi
New Signs and Symbols: ∠ angle, ° degrees, ' feet, kg kilogram, m measure of angle, min minute, right angle marker	*New Signs and Symbols:* $, ÷ division, fl oz fluid ounce, hr hour, lb pound, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction	*New Signs and Symbols:* dm decimeter/decimetre, h height, km kilometer/kilometre, l length, ↔ line symbol, mL milliliter/millilitre, mm millimeter/millimetre, π pi, segment overbar, V volume, w width

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with	• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours	• Measures length to the nearest millimeter • Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Converts between grams and kilograms* • Solves problems involving weight in the customary system and converts to larger or smaller units • Converts from Celsius to Fahrenheit, given conversion ratios

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the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*		
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Determines the diameter, given the radius, and vice versa* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*	• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Determines the diameter, given the radius, and vice versa* • Defines pi and knows common estimates (3.14 and 22/7)* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*	• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length • Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Identifies the formula for circumference of a circle* • Knows the relationship between radius, diameter, and circumference • Compares area of numerous triangles* • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Solves problems comparing areas of different polygons* • Identifies the formula for area of circle* • Understands the procedure for finding the area and surface area of figures
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Knows the approximate size of an ounce*	• Converts between cups, pints, quarts, and gallons	• Computes basic operations with units of capacity

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• Knows the approximate size of a gallon* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Counts squares to determine surface area of a cube* • Estimates and finds volume of a figure using cubic units	• Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*
New Vocabulary: century, coin, how long, micrometer, protractor	*New Vocabulary:* cord, cubic meter, cubic millimeter, cubic yard, pi	*New Vocabulary:* minus, tripled
New Signs and Symbols: $, ÷ division, fl oz fluid ounce, hr hour, lb pound, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction	*New Signs and Symbols:* dm decimeter/decimetre, h height, km kilometer/kilometre, l length, ↔ line symbol, mL milliliter/millilitre, mm millimeter/millimetre, π pi, segment overbar, V volume, w width	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, d diameter, / per, r radius, t time

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours	• Measures length to the nearest millimeter • Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Converts between grams and kilograms* • Solves problems involving weight in the customary system and converts to larger or smaller units • Converts from Celsius to Fahrenheit, given conversion ratios	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios • Uses significant digits appropriately as they relate to precision*
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Determines the diameter, given the radius, and vice versa* • Defines pi and knows common estimates (3.14 and	• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length • Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a	• Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the circumference when given the diameter

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22/7)* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*	circle (or vice versa)* • Identifies the formula for circumference of a circle* • Knows the relationship between radius, diameter, and circumference • Compares area of numerous triangles* • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Solves problems comparing areas of different polygons* • Identifies the formula for area of circle* • Understands the procedure for finding the area and surface area of figures	or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of a parallelogram, given a labeled diagram* • Solves problems involving area of a circle • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems comparing areas of different polygons* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)* • Solves complex problems involving inscribed figures • Uses dimensional analysis for unit conversions (area)
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Converts between cups, pints, quarts, and gallons • Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Computes basic operations with units of capacity • Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Solves problems involving capacity in the metric system and converts to larger or smaller units* • Determines the surface area of rectangular solids • Determines the surface area of a cylinder, given a formula (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units)
New Vocabulary: cord, cubic meter, cubic millimeter, cubic yard, pi	*New Vocabulary:* minus, tripled	*New Vocabulary:* linear foot, quadrupled, square kilometer
New Signs and Symbols: dm decimeter/decimetre, h height, km kilometer/kilometre, l length, ↔ line symbol, mL milliliter/millilitre, mm millimeter/millimetre, π pi,	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, d diameter, / per, r radius, t time	*New Signs and Symbols:* b base, cubic centimeter/centimetre, mph miles per hour, sq square, square centimeter/centimetre, Δ triangle

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segment overbar, V volume, w width		

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Measures length to the nearest millimeter • Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Converts between grams and kilograms* • Solves problems involving weight in the customary system and converts to larger or smaller units • Converts from Celsius to Fahrenheit, given conversion ratios	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios • Uses significant digits appropriately as they relate to precision*	• Uses dimensional analysis for unit conversions (time) • Uses fractional units appropriately as they relate to precision*
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length • Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Identifies the formula for circumference of a circle* • Knows the relationship between radius, diameter, and	• Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)*	• Solves complex problems involving the measurement of angles* • Determines the area of a figure when plotting ordered pairs without a grid* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems involving complex figures (e.g.,

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circumference • Compares area of numerous triangles* • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Solves problems comparing areas of different polygons* • Identifies the formula for area of circle* • Understands the procedure for finding the area and surface area of figures	• Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of a parallelogram, given a labeled diagram* • Solves problems involving area of a circle • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems comparing areas of different polygons* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)* • Solves complex problems involving inscribed figures • Uses dimensional analysis for unit conversions (area)	triangle, parallelogram)* • Solves complex problems involving inscribed figures • Solves problems comparing area to perimeter (analysis)
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Computes basic operations with units of capacity • Converts within the metric system • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Solves problems involving capacity in the metric system and converts to larger or smaller units* • Determines the surface area of rectangular solids • Determines the surface area of a cylinder, given a formula (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units)	• Solves complex real-world problems involving capacity* • Solves real-world problems involving surface area* • Determines the surface area of a pyramid (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the volume of a cylinder • Calculates the radius of a sphere, given the volume and formula (metric units)* • Solves real-world problems comparing volumes of figures
New Vocabulary: minus, tripled	*New Vocabulary:* linear foot, quadrupled, square kilometer	*New Vocabulary:* right pyramid, slant height
New Signs and Symbols: ( ) order of operations, A area, C circumference, d diameter, / per, r radius, t time	*New Signs and Symbols:* b base, cubic centimeter/centimetre, mph miles per hour, sq square, square centimeter/centimetre, Δ triangle	*New Signs and Symbols:* ( ) ordered pair, ≈ approximately equal to, - negative number, square root symbol

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**	**Money, Length, Weight, Time, and Temperature**
• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios • Uses significant digits appropriately as they relate to precision*	• Uses dimensional analysis for unit conversions (time) • Uses fractional units appropriately as they relate to precision*	
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**	**Angle Measure, Perimeter, Circumference, Area**
• Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of a parallelogram, given a labeled diagram* • Solves problems involving area of a circle • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems comparing areas of different polygons*	• Solves complex problems involving the measurement of angles* • Determines the area of a figure when plotting ordered pairs without a grid* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems involving complex figures (e.g., triangle, parallelogram)* • Solves complex problems involving inscribed figures • Solves problems comparing area to perimeter (analysis)	• Solves complex problems comparing the areas of circles

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
Blank cells indicate data are limited or unavailable for this range or document version.

• Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)* • Solves complex problems involving inscribed figures • Uses dimensional analysis for unit conversions (area)		
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Solves problems involving capacity in the metric system and converts to larger or smaller units* • Determines the surface area of rectangular solids • Determines the surface area of a cylinder, given a formula (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units)	• Solves complex real-world problems involving capacity* • Solves real-world problems involving surface area* • Determines the surface area of a pyramid (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the volume of a cylinder • Calculates the radius of a sphere, given the volume and formula (metric units)* • Solves real-world problems comparing volumes of figures	• Solves real-world problems involving surface area* • Analyzes a problem solving situation to determine the surface area of a cylinder (customary)*
New Vocabulary: linear foot, quadrupled, square kilometer	*New Vocabulary:* right pyramid, slant height	*New Vocabulary:* none
New Signs and Symbols: b base, cubic centimeter/centimetre, mph miles per hour, sq square, square centimeter/centimetre, Δ triangle	*New Signs and Symbols:* ( ) ordered pair, ≈ approximately equal to, - negative number, square root symbol	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Above 260

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
Money, Length, Weight, Time, and Temperature	**Money, Length, Weight, Time, and Temperature**
• Uses dimensional analysis for unit conversions (time) • Uses fractional units appropriately as they relate to precision*	
Angle Measure, Perimeter, Circumference, Area	**Angle Measure, Perimeter, Circumference, Area**
• Solves complex problems involving the measurement of angles* • Determines the area of a figure when plotting ordered pairs without a grid* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems involving complex figures (e.g., triangle, parallelogram)* • Solves complex problems involving inscribed figures • Solves problems comparing area to perimeter (analysis)	• Solves complex problems comparing the areas of circles
Volume and Surface Area	**Volume and Surface Area**
• Solves complex real-world problems involving capacity* • Solves real-world problems involving surface area* • Determines the surface area of a pyramid (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the volume of a cylinder • Calculates the radius of a sphere, given the volume and formula (metric units)* • Solves real-world problems comparing volumes of figures	• Solves real-world problems involving surface area* • Analyzes a problem solving situation to determine the surface area of a cylinder (customary)*
New Vocabulary: right pyramid, slant height	*New Vocabulary:* none

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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New Signs and Symbols: ( ) ordered pair, ≈ approximately equal to, - negative number, square root symbol	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: Below 171

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**
• Solves simple problems based on data from tables* • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**
Probability	**Probability**
	• Investigates probability of "more likely" or "less likely" using a table*
New Vocabulary: dollar, shortest, table	*New Vocabulary:* less, quart
New Signs and Symbols: $ dollar sign	*New Signs and Symbols:* in. inch, = is equal to

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 171 - 180

Skills and Concepts to Enhance Below 171	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Solves simple problems based on data from tables* • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
Probability	**Probability**	**Probability**
	• Investigates probability of "more likely" or "less likely" using a table*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*
New Vocabulary: dollar, shortest, table	*New Vocabulary:* less, quart	*New Vocabulary:* consecutive, lowest, most likely
New Signs and Symbols: $ dollar sign	*New Signs and Symbols:* in. inch, = is equal to	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs	• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a table*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*
New Vocabulary: less, quart	*New Vocabulary:* consecutive, lowest, most likely	*New Vocabulary:* line graph
New Signs and Symbols: in. inch, = is equal to	*New Signs and Symbols:* none	*New Signs and Symbols:* a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs	• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*	• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*	• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event* • Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space
New Vocabulary: consecutive, lowest, most likely	*New Vocabulary:* line graph	*New Vocabulary:* bar graph, below, chance, probability, random
New Signs and Symbols: none	*New Signs and Symbols:* a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time	*New Signs and Symbols:* ft feet, kg kilogram

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*	• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables	• Solves problems using pictographs* • Solves problems using bar graphs • Interprets data in line graphs (e.g., change over time) • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets data in scatter plots • Reads and interprets data in line plots* • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
		• Determines the average (mean) of a simple set of data • Solves simple problems involving mean
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*	• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event* • Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space	• Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given • Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space • Determines probability when drawing objects from containers - must determine size of sample space • Determines the complement of a simple event* • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of

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		given items • Predicts the sample space, based on the outcome of an experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*
New Vocabulary: line graph	*New Vocabulary:* bar graph, below, chance, probability, random	*New Vocabulary:* combinations, fastest, fitted line, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, scatter plot, tails
New Signs and Symbols: a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time	*New Signs and Symbols:* ft feet, kg kilogram	*New Signs and Symbols:* { } set notation, ¢ cent sign, d distance, hr hour, mph miles per hour, P( ) probability, t time

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables	• Solves problems using pictographs* • Solves problems using bar graphs • Interprets data in line graphs (e.g., change over time) • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets data in scatter plots • Reads and interprets data in line plots* • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*	• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
	• Determines the average (mean) of a simple set of data • Solves simple problems involving mean	• Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Explains rationale for determining the mean, median, or mode of a set of data*
Probability	**Probability**	**Probability**
• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event*	• Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given	• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the complement of a simple event*

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.

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• Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space	• Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space • Determines probability when drawing objects from containers - must determine size of sample space • Determines the complement of a simple event* • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of given items • Predicts the sample space, based on the outcome of an experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*	• Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms* • Given probability as a decimal, estimates probability as a fraction* • Identifies whether predictions are based on theoretical or experimental probability*
New Vocabulary: bar graph, below, chance, probability, random	*New Vocabulary:* combinations, fastest, fitted line, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, scatter plot, tails	*New Vocabulary:* experimental probability, frequency table, median, mode, survey, theoretical probability
New Signs and Symbols: ft feet, kg kilogram	*New Signs and Symbols:* { } set notation, ¢ cent sign, d distance, hr hour, mph miles per hour, P( ) probability, t time	*New Signs and Symbols:* cm centimeter/centimetre, oz ounce, | tally mark

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Solves problems using pictographs* • Solves problems using bar graphs • Interprets data in line graphs (e.g., change over time) • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets data in scatter plots • Reads and interprets data in line plots* • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*	• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*	• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Reads and interprets data in box-and-whisker plots • Estimates line of best fit to make predictions • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
• Determines the average (mean) of a simple set of data • Solves simple problems involving mean	• Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Explains rationale for determining the mean, median, or mode of a set of data*	• Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*
Probability	**Probability**	**Probability**
• Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given • Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space	• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the complement of a simple event* • Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple	• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event*

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Blank cells indicate data are limited or unavailable for this range or document version.

• Determines probability when drawing objects from containers - must determine size of sample space • Determines the complement of a simple event* • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of given items • Predicts the sample space, based on the outcome of an experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*	probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms* • Given probability as a decimal, estimates probability as a fraction* • Identifies whether predictions are based on theoretical or experimental probability*	• Determines the probability of independent simple compound events • Determines the complement of a complex event* • Recognizes the relationship between events and probability - selects an experiment which matches a given probability*
New Vocabulary: combinations, fastest, fitted line, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, scatter plot, tails	*New Vocabulary:* experimental probability, frequency table, median, mode, survey, theoretical probability	*New Vocabulary:* average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile
New Signs and Symbols: { } set notation, ¢ cent sign, d distance, hr hour, mph miles per hour, P( ) probability, t time	*New Signs and Symbols:* cm centimeter/centimetre, oz ounce, | tally mark	*New Signs and Symbols:* ( ) ordered pair, $ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, - negative number, ? next in sequence, • outlier

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*	• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Reads and interprets data in box-and-whisker plots • Estimates line of best fit to make predictions • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables	• Reads and interprets data in tables • Reads and interprets data in box-and-whisker plots • Reads and interprets data in stem-and-leaf plots • Predicts from an analysis of data and statistical measures*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
• Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Explains rationale for determining the mean, median, or mode of a set of data*	• Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*	• Determines the range of a complex set of data • Identifies a set of data with a given mean, median, and/or mode*
Probability	**Probability**	**Probability**
• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the complement of a simple event* • Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple	• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event*	• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines the complement of a complex event* • Determines probability using an area model • Uses multiplication principle of counting to determine possibilities

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.

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probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms* • Given probability as a decimal, estimates probability as a fraction* • Identifies whether predictions are based on theoretical or experimental probability*	• Determines the probability of independent simple compound events • Determines the complement of a complex event* • Recognizes the relationship between events and probability - selects an experiment which matches a given probability*	• Uses counting procedures to determine possibilities* • Uses theoretical probability to predict future events
New Vocabulary: experimental probability, frequency table, median, mode, survey, theoretical probability	*New Vocabulary:* average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile	*New Vocabulary:* mileage table, stem and leaf plot
New Signs and Symbols: cm centimeter/centimetre, oz ounce, | tally mark	*New Signs and Symbols:* ( ) ordered pair, $ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, - negative number, ? next in sequence, • outlier	*New Signs and Symbols:* ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Reads and interprets data in box-and-whisker plots • Estimates line of best fit to make predictions • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables	• Reads and interprets data in tables • Reads and interprets data in box-and-whisker plots • Reads and interprets data in stem-and-leaf plots • Predicts from an analysis of data and statistical measures*	• Uses random sampling techniques* • Displays data appropriately - circle graph - calculations necessary* • Uses the regression line method to make predictions*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
• Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*	• Determines the range of a complex set of data • Identifies a set of data with a given mean, median, and/or mode*	• Solves complex problems involving mean* • Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data* • Evaluates how adding data to a set of data affects the measures of center*
Probability	**Probability**	**Probability**
• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event* • Determines the probability of independent simple	• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines the complement of a complex event* • Determines probability using an area model • Uses multiplication principle of counting to determine possibilities • Uses counting procedures to determine possibilities*	• Determines certainty from a set data* • Determines the probabilities of complex compound events (independent)*

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compound events • Determines the complement of a complex event* • Recognizes the relationship between events and probability - selects an experiment which matches a given probability*	• Uses theoretical probability to predict future events	
New Vocabulary: average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile	*New Vocabulary:* mileage table, stem and leaf plot	*New Vocabulary:* none
New Signs and Symbols: ( ) ordered pair, $ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, - negative number, ? next in sequence, • outlier	*New Signs and Symbols:* ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	*New Signs and Symbols:* + addition

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**	**Organize, Interpret, Analyze, Predict Using Data**
• Reads and interprets data in tables • Reads and interprets data in box-and-whisker plots • Reads and interprets data in stem-and-leaf plots • Predicts from an analysis of data and statistical measures*	• Uses random sampling techniques* • Displays data appropriately - circle graph - calculations necessary* • Uses the regression line method to make predictions*	• Reads and interprets interquartile range in box-and-whisker plots*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**	**Measures of Central Tendency and Range**
• Determines the range of a complex set of data • Identifies a set of data with a given mean, median, and/or mode*	• Solves complex problems involving mean* • Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data* • Evaluates how adding data to a set of data affects the measures of center*	
Probability	**Probability**	**Probability**
• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines the complement of a complex event* • Determines probability using an area model • Uses multiplication principle of counting to determine possibilities • Uses counting procedures to determine possibilities* • Uses theoretical probability to predict future events	• Determines certainty from a set data* • Determines the probabilities of complex compound events (independent)*	• Determines the probabilities of compound events (dependent)
New Vocabulary: mileage table, stem and leaf plot	*New Vocabulary:* none	*New Vocabulary:* none
New Signs and Symbols: ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	*New Signs and Symbols:* + addition	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis and Probability
RIT Score Range: Above 260

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
Organize, Interpret, Analyze, Predict Using Data	**Organize, Interpret, Analyze, Predict Using Data**
• Uses random sampling techniques* • Displays data appropriately - circle graph - calculations necessary* • Uses the regression line method to make predictions*	• Reads and interprets interquartile range in box-and-whisker plots*
Measures of Central Tendency and Range	**Measures of Central Tendency and Range**
• Solves complex problems involving mean* • Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data* • Evaluates how adding data to a set of data affects the measures of center*	
Probability	**Probability**
• Determines certainty from a set data* • Determines the probabilities of complex compound events (independent)*	• Determines the probabilities of compound events (dependent)
New Vocabulary: none	*New Vocabulary:* none
New Signs and Symbols: + addition	*New Signs and Symbols:* none

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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